PAPER – 8 : FINANCIAL MANAGEMENT AND ECONOMICS FOR FINANCE

*Question No. **1** is compulsory.*

*Attempt any **four** questions out of the remaining **five** questions.*

In case, any candidate answers extra question(s)/ sub-question(s) over and above the required number, then only the requisite number of questions first answered in the answer book shall be valued and subsequent extra question(s) answered shall be ignored.

Working notes should form part of the answer

SECTION – A: FINANCIAL MANAGEMENT

Question 1

(a) *Stopgo Ltd, an all equity financed company, is considering the repurchase of ₹ 200 lakhs equity and to replace it with 15% debentures of the same amount. Current market Value of the company is ₹ 1140 lakhs and it's cost of capital is 20%. It's Earnings before Interest and Taxes (EBIT) are expected to remain constant in future. It's entire earnings are distributed as dividend. Applicable tax rate is 30 per cent.*

You are required to calculate the impact on the following on account of the change in the capital structure as per Modigliani and Miller (MM) Hypothesis:

(i)   *The market value of the company*

(ii) *It's cost of capital, and*

(iii) *It's cost of equity*   **(5 Marks)**

(b) *The following data have been extracted from the books of LM Ltd:*

Sales - ₹100 lakhs

Interest Payable per annum - ₹ 10 lakhs

Operating leverage - 1.2

Combined leverage - 2.16

You are required to calculate:

(i)   *The financial leverage,*

(ii) *Fixed cost and*

(iii) *P/V ratio*   **(5 Marks)**

(c) *The accountant of Moon Ltd. has reported the following data:*

Gross profit	*₹ 60,000*
Gross Profit Margin	*20 per cent*
Total Assets Turnover	*0.30:1*

Net Worth to Total Assets	*0.90:1*
Current Ratio	*1.5:1*
Liquid Assets to Current Liability	*1:1*
Credit Sales to Total Sales	*0.80:1*
Average Collection Period	*60 days*

Assume 360 days in a year

You are required to complete the following:

Balance Sheet of Moon Ltd.

Liabilities	₹	Assets	₹
Net Worth		*Fixed Assets*	
Current Liabilities		*Stock*	
		Debtors	
		Cash	
Total Liabilities		*Total Assets*	

(5 Marks)

(d) *Sun Ltd. is considering two financing plans.*

Details of which are as under:

(i) *Fund's requirement – ₹100 Lakhs*

(ii) *Financial Plan*

Plan	Equity	Debt
I	*100%*	*-*
II	*25%*	*75%*

(iii) *Cost of debt – 12% p.a.*

(iv) *Tax Rate – 30%*

(v) *Equity Share ₹10 each, issued at a premium of ₹15 per share*

(vi) *Expected Earnings before Interest and Taxes (EBIT) ₹40 Lakhs*

You are required to compute:

(i) *EPS in each of the plan*

(ii) *The Financial Break Even Point*

(iii) *Indifference point between Plan I and II*   **(5 Marks)**

Answer

(a) Working Note

$$\frac{\text{Net income (NI) for equity - holders}}{K_e} = \text{Market Value of Equity}$$

$$\frac{\text{Net income (NI) for equity holders}}{0.20} = ₹\ 1,140 \text{ lakhs}$$

Therefore, Net Income to equity–holders = ₹ 228 lakhs

EBIT = ₹ 228 lakhs / 0.7 = ₹ 325.70 lakhs

	All Equity (₹ In lakhs)	Debt of Equity (₹ In lakhs)
EBIT	325.70	325.70
Interest on ₹200 lakhs @ 15%	--	30.00
EBT	325.70	295.70
Tax @ 30 %	97.70	88.70
Income available to equity holders	228	207

(i) Market value of levered firm = Value of unlevered firm + Tax Advantage

= ₹ 1,140 lakhs + (₹200 lakhs x 0.3)

= ₹ 1,200 lakhs

The impact is that the market value of the company has increased by ₹ 60 lakhs (₹ 1,200 lakhs – ₹ 1,140 lakhs)

Calculation of Cost of Equity

K_e = (Net Income to equity holders / Equity Value) X 100

= (207 lakhs / 1200 lakhs – 200 lakhs) X 100

= (207/ 1000) X 100

= 20.7 %

(ii) Cost of Capital

Components	Amount (₹ In lakhs)	Cost of Capital %	Weight	WACC %
Equity	1000	20.7	83.33	17.25
Debt	200	(15% X 0.7) =10.5	16.67	1.75
	1200			19.00

The impact is that the WACC has fallen by 1% (20% - 19%) due to the benefit of tax relief on debt interest payment.

(iii) Cost of Equity is 20.7% [As calculated in point (i)]

The impact is that cost of equity has risen by 0.7% i.e. 20.7% - 20% due to the presence of financial risk.

Further, Cost of Capital and Cost of equity can also be calculated with the help of formulas as below, though there will be no change in final answers.

Cost of Capital $(K_o) = K_{eu}(1-tL)$

Where,

K_{eu} = Cost of equity in an unlevered company

t   = Tax rate

$$L = \frac{Debt}{Debt+Equity}$$

$$K_o = 0.2 \times \left(1 - \frac{₹\,200\,lakh}{₹\,1,200\,lakh} \times 0.3\right)$$

So, Cost of capital = 0.19 or 19%

Cost of Equity $(K_e) = K_{eu} + (K_{eu} - K_d)\dfrac{Debt\,(1-t)}{Equity}$

Where,

K_{eu} = Cost of equity in an unlevered company

K_d = Cost of debt

t   = Tax rate

$$K_e = 0.20 + \left((0.20 - 0.15) \times \frac{₹\,200\,lakh \times 0.7}{₹\,1,000\,lakh}\right)$$

K_e = 0.20 + 0.007 = 0.207 or 20.7%

So, Cost of Equity = 20.70%

(b) (i) Calculation of Financial Leverage:

Combined Leverage (CL) = Operating Leverage (OL) × Financial Leverage (FL)

2.16   = 1.2 × FL

FL = 1.8

(ii) Calculation of Fixed cost:

$$\text{Financial Leverage} = \frac{\text{EBIT}}{\text{EBT i.e EBIT} - \text{Interest}}$$

$$1.8 = \frac{\text{EBIT}}{\text{EBIT} - 10,00,000}$$

1.8 (EBIT – 10,00,000) = EBIT

1.8 EBIT - 18,00,000 = EBIT

$$\text{EBIT} = \frac{18,00,000}{0.8} = ₹\,22,50,000$$

Further, $\text{Operating Leverage} = \dfrac{\text{Contribution}}{\text{EBIT}}$

$$1.2 = \frac{\text{Contribution}}{₹\,22,50,000}$$

Contribution = ₹ 27,00,000

Fixed Cost = Contribution – EBIT

= ₹ 27, 00,000 – ₹ 22,50,000

Fixed cost = ₹ 4,50,000

(iii) Calculation of P/V ratio:

$$\text{P/V ratio} = \frac{\text{Contribution (C)}}{\text{Sales (S)}} \times 100 = \frac{27,00,000}{100,00,000} \times 100 = 27\%$$

(c) Preparation of Balance Sheet

Working Notes:

Sales	= Gross Profit / Gross Profit Margin
	= 60,000 / 0.2 = ₹ 3,00,000
Total Assets	= Sales / Total Asset Turnover
	= 3,00,000 / 0.3 = ₹ 10,00,000
Net Worth	= 0.9 X Total Assets

	= 0.9 X ₹ 10,00,000 = ₹ 9,00,000
Current Liability	= Total Assets – Net Worth
	= ₹ 10,00,000 – ₹ 9,00,000
	= ₹ 1,00,000
Current Assets	= 1.5 x Current Liability
	= 1.5 x ₹ 1,00,000 = ₹ 1,50,000
Stock	= Current Assets – Liquid Assets
	= Current Assets – (Liquid Assets / Current Liabilities =1)
	= 1,50,000 – (LA / 1,00,000 = 1) = ₹ 50,000
Debtors	= Average Collection Period X Credit Sales / 360
	= 60 x 0.8 x 3,00,000 / 360 = ₹ 40,000
Cash	= Current Assets – Debtors – Stock
	= ₹ 1,50,000 – ₹ 40,000 – ₹ 50,000
	=₹ 60,000
Fixed Assets	= Total Assets – Current Assets
	= ₹ 10,00,000 – ₹ 1,50,000
	= ₹ 8,50,000

Balance Sheet

Liabilities	₹	Assets	₹
Net Worth	9,00,000	Fixed Assets	8,50,000
Current Liabilities	1,00,000	Stock	50,000
		Debtors	40,000
		Cash	60,000
Total liabilities	10,00,000	Total Assets	10,00,000

(d) (i)   Computation of Earnings Per Share (EPS)

Plans	I (₹)	II (₹)
Earnings before interest & tax (EBIT)	40,00,000	40,00,000
Less: Interest charges (12% of ₹75 lakh)	--	(9,00,000)
Earnings before tax (EBT)	40,00,000	31,00,000
Less: Tax @ 30%	(12,00,000)	(9,30,000)
Earnings after tax (EAT)	28,00,000	21,70,000

No. of equity shares (@ ₹10+₹15)	4,00,000	1,00,000
E.P.S (₹)	7.00	21.70

(ii) Computation of Financial Break-even Points

Plan 'I' = 0 – Under this plan there is no interest payment, hence the financial break-even point will be zero.

Plan 'II' = ₹ 9,00,000 - Under this plan there is an interest payment of ₹9,00,000, hence the financial break -even point will be ₹9 lakhs

(iii) Computation of Indifference Point between Plan I and Plan II:

Indifference point is a point where EBIT of Plan-I and Plan-II are equal. This can be calculated by applying the following formula:

$\{(EBIT - I_1)(1-T)\} / E_1 = \{(EBIT - I_2)(1-T)\} / E_2$

So $\dfrac{EBIT(1-0.3)}{4,00,000\,shares} = \dfrac{(EBIT - ₹9,00,000)(1-0.3)}{1,00,000\,shares}$

Or, 2.8 EBIT – 25,20,000 = 0.7EBIT

Or, 2.1EBIT   = 25,20,000

EBIT   =12,00,000

Question 2

(a) XYZ Ltd. is presently all equity financed. The directors of the company have been evaluating investment in a project which will require ₹ 270 lakhs capital expenditure on new machinery. They expect the capital investment to provide annual cash flows of ₹ 42 lakhs indefinitely which is net of all tax adjustments. The discount rate which it applies to such investment decisions is 14% net.

The directors of the company believe that the current capital structure fails to take advantage of tax benefits of debt, and propose to finance the new project with undated perpetual debt secured on the company's assets. The company intends to issue sufficient debt to cover the cost of capital expenditure and the after tax cost of issue.

The current annual gross rate of interest required by the market on corporate undated debt of similar risk is 10%. The after tax costs of issue are expected to be ₹ 10 lakhs. Company's tax rate is 30%.

You are required to calculate:

(i)   The adjusted present value of the investment,

(ii) The adjusted discount rate and

    (iii) Explain the circumstances under which this adjusted discount rate may be used to evaluate future investments. **(8 Marks)**

(b) What are Masala Bonds? **(2 Marks)**

Answer

(a) (i) Calculation of Adjusted Present Value of Investment (APV)

Adjusted PV = Base Case PV + PV of financing decisions associated with the project

Base Case NPV for the project:

(-) ₹ 270 lakhs + (₹ 42 lakhs / 0.14)	= (-) ₹ 270 lakhs + ₹ 300 lakhs
	= ₹ 30
Issue costs	= ₹ 10 lakhs
Thus, the amount to be raised	= ₹ 270 lakhs + ₹ 10 lakhs
	= ₹ 280 lakhs
Annual tax relief on interest payment	= ₹ 280 X 0.1 X 0.3
	= ₹ 8.4 lakhs in perpetuity
The value of tax relief in perpetuity	= ₹ 8.4 lakhs / 0.1
	= ₹ 84 lakhs

Therefore, APV = Base case PV – Issue Costs + PV of Tax Relief on debt interest

        = ₹ 30 lakhs – ₹ 10 lakhs + 84 lakhs = ₹ 104 lakhs

(ii) Calculation of Adjusted Discount Rate (ADR)

Annual Income / Savings required to allow an NPV to zero

Let the annual income be x.

(-) ₹280 lakhs X (Annual Income / 0.14) = (-) ₹104 lakhs

Annual Income / 0.14   = (-) ₹ 104 + ₹ 280 lakhs

Therefore, Annual income = ₹ 176 X 0.14 = ₹ 24.64 lakhs

Adjusted discount rate   = (₹ 24.64 lakhs / ₹280 lakhs) X 100

                      = 8.8%

(iii) Useable circumstances

This ADR may be used to evaluate future investments only if the business risk of the new venture is identical to the one being evaluated here and the project is to be financed by the same method on the same terms. The effect on the company's cost of capital of introducing debt into the capital structure cannot be ignored.

(b) Masala Bond:

Masala (means spice) bond is an Indian name used for Rupee denominated bond that Indian corporate borrowers can sell to investors in overseas markets. These bonds are issued outside India but denominated in Indian Rupees. NTPC raised ₹2,000 crore via masala bonds for its capital expenditure in the year 2016.

Question 3

Maruti Ltd. requires a plant costing ₹ 200 Lakhs for a period of 5 years. The company can use the plant for the stipulated period through leasing arrangement or the requisite amount can be borrowed to buy the plant. In case of leasing, the company received a proposal to pay annual lease rent of ₹ 48 Lakhs at the end of each year for a period of 5 years.

In case of purchase, the company would have a 12%, 5 years loan to be paid in equated annual installment, each installment becoming due in the beginning of each year. It is estimated that plant can be sold for ₹ 40 Lakhs at the end of 5th year. The company uses straight line method of depreciation. Corporate tax rate is 30%. Cost of Capital after tax for the company is 10%.

The PVIF @ 10% and 12% for the five years are given below:

Year	1	2	3	4	5
PVIF @ 10	0.909	0.826	0.751	0.683	0.621
PVIF @ 12	0.893	0.797	0.712	0.636	0.567

You are required to advise whether the plant should be purchased or taken on lease.

(10 Marks)

Answer

Purchase Option

Loan installment = ₹ 200 lakhs / (1 + PVIFA 12%, 4)

= ₹ 200 lakhs / (1 + 3.038) = ₹ 49.53 lakhs

Interest payable = (₹ 49.53 X 5) – ₹ 200 lakhs = ₹ 47.65 lakhs

Working note:

Amortisation of Loan Installment

Year	Loan amount (₹ In Lakhs)	Installment (₹ In Lakhs)	Interest (₹ In Lakhs)	Principal (₹ In Lakhs)	O/S Amount (₹ In Lakhs)
0	200	49.53	0.00	49.53	150.47
1	150.47	49.53	18.06	31.47	119.00
2	119.00	49.53	14.28	35.25	83.75
3	83.75	49.53	10.05	39.48	44.27

| 4 | 44.27 | 49.53 | *5.26 | 44.27 | - |
| 5 | 0 | 0 | 0 | 0 | 0 |

Calculation of PV of outflow under Purchase Option

(₹ In Lakhs)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
End	Debt Payment	Int. of the o/s Principal	Dep.	Tax Shield [(3) +(4)]x 0.3	Net Cash outflows (2) – (5)	PV factors @ 10%	PV
0	49.53	0.00	0.00	0.00	49.53	1.000	49.53
1	49.53	18.06	32.00	15.02	34.51	0.909	31.37
2	49.53	14.28	32.00	13.88	35.65	0.826	29.44
3	49.53	10.05	32.00	12.61	36.92	0.751	27.72
4	49.53	*5.26	32.00	11.18	38.35	0.683	26.19
5	49.53	0	32.00	9.60	(9.60)	0.621	(5.96)
		47.65	160.00				158.29
					Less: PV of Salvage Value (₹40 lakhs x 0.621) =		24.84
						Total PV of Outflow	133.45

*Balancing Figure

Leasing Option

PV of Outflows under lease @ 10%= ₹ 48 lakhs x (1-0.30) x 3.790

= ₹ 127.34 lakhs

Decision: The plant should be taken on lease because the PV of outflows is less as compared to purchase option.

Question 4

A company is evaluating a project that requires initial investment of ₹ 60 lakhs in fixed assets and ₹ 12 lakhs towards additional working capital.

The project is expected to increase annual real cash inflow before taxes by ₹ 24,00,000 during its life. The fixed assets would have zero residual value at the end of life of 5 years. The company follows straight line method of depreciation which is expected for tax purposes also. Inflation is expected to be 6% per year. For evaluating similar projects, the company uses discounting rate of 12% in real terms. Company's tax rate is 30%.

Advise whether the company should accept the project, by calculating NPV in real terms.

PVIF (12%, 5 years)		PVIF (12%, 5 years)	
Year 1	0.893	Year 1	0.943
Year 2	0.797	Year 2	0.890
Year 3	0.712	Year 3	0.840
Year 4	0.636	Year 4	0.792
Year 5	0.567	Year 5	0.747

(10 Marks)

Answer

(i)   Equipment's initial cost = ₹ 60,00,000 + ₹ 12,00,000

= ₹ 72,00,000

(ii) Annual straight line depreciation = ₹ 60,00,000/5

= ₹ 12,00,000.

(iii) Net Annual cash flows can be calculated as follows:

= Before Tax CFs × (1 – Tc) + Tc × Depreciation (Tc = Corporate tax i.e. 30%)

= ₹ 24,00,000 × (1 – 0.3) + (0.3 x ₹ 12,00,000)

= ₹ 16,80,000 + ₹ 3,60,000 = ₹ 20,40,000

So, Total Present Value = PV of inflow + PV of working capital released

= (₹ 20,40,000 × PVIF 12%, 5 years) + (₹ 12,00,000 × 0.567)

= (₹ 20,40,000 × 3.605) + ₹ 6,80,400

= ₹ 73,54,200 + ₹ 6,80,400

= ₹ 80,34,600

So NPV   = PV of Inflows – Initial Cost

= ₹ 80,34,600 – ₹ 72,00,000

= ₹ 8,34,600

Advice: Company should accept the project as the NPV is Positive

Question 5

Day Ltd., a newly formed company has applied to the Private Bank for the first time for financing it's Working Capital Requirements. The following informations are available about the projections for the current year:

Estimated Level of Activity	*Completed Units of Production 31200 plus unit of work in progress 12000*
Raw Material Cost	*₹ 40 per unit*
Direct Wages Cost	*₹ 15 per unit*
Overhead	*₹ 40 per unit (inclusive of Depreciation ₹10 per unit)*
Selling Price	*₹ 130 per unit*
Raw Material in Stock	*Average 30 days consumption*
Work in Progress Stock	*Material 100% and Conversion Cost 50%*
Finished Goods Stock	*24000 Units*
Credit Allowed by the supplier	*30 days*
Credit Allowed to Purchasers	*60 days*
Direct Wages (Lag in payment)	*15 days*
Expected Cash Balance	*₹ 2,00,000*

Assume that production is carried on evenly throughout the year (360 days) and wages and overheads accrue similarly. All sales are on the credit basis. You are required to calculate the Net Working Capital Requirement on Cash Cost Basis.   **(10 Marks)**

Answer

Calculation of Net Working Capital requirement:

	(₹)	(₹)
A. Current Assets:		
Inventories:		
Stock of Raw material (Refer to Working note (iii))	1,44,000	
Stock of Work in progress (Refer to Working note (ii))	7,50,000	
Stock of Finished goods (Refer to Working note (iv))	20,40,000	
Debtors for Sales (Refer to Working note (v))	1,02,000	
Cash	2,00,000	
Gross Working Capital	32,36,000	32,36,000
B. Current Liabilities:		
Creditors for Purchases	1,56,000	

(Refer to Working note (vi)		
Creditors for wages (Refer to Working note (vii)	23,250	
	1,79,250	1,79,250
Net Working Capital (A - B)		**30,56,750**

Working Notes:

(i)   Annual cost of production

	(₹)
Raw material requirements {(31,200 × ₹ 40) + (12,000 x ₹ 40)}	17,28,000
Direct wages {(31,200 ×₹ 15) +(12,000 X ₹ 15 x 0.5)}	5,58,000
Overheads (exclusive of depreciation) {(31,200 × ₹ 30) + (12,000 x ₹ 30 x 0.5)}	11,16,000
Gross Factory Cost	34,02,000
Less: Closing W.I.P [12,000 (₹ 40 + ₹ 7.5 + ₹15)]	(7,50,000)
Cost of Goods Produced	26,52,000
Less: Closing Stock of Finished Goods (₹ 26,52,000 × 24,000/31,200)	(20,40,000)
Total Cash Cost of Sales	6,12,000

(ii)   Work in progress stock

	(₹)
Raw material requirements (12,000 units × ₹40)	4,80,000
Direct wages (50% × 12,000 units × ₹ 15)	90,000
Overheads (50% × 12,000 units × ₹ 30)	1,80,000
	7,50,000

(iii) Raw material stock

It is given that raw material in stock is average 30 days consumption. Since, the company is newly formed; the raw material requirement for production and work in progress will be issued and consumed during the year. Hence, the raw material consumption for the year (360 days) is as follows:

	(₹)
For Finished goods (31,200 × ₹ 40)	12,48,000
For Work in progress (12,000 × ₹ 40)	4,80,000
	17,28,000

Raw material stock = $\dfrac{₹17,28,000}{360\,\text{days}} \times 30\,\text{days} = ₹1,44,000$

(iv) Finished goods stock:

24,000 units @ ₹ (40+15+30) per unit = ₹20,40,000

(v) Debtors for sale: $₹\,6,12,000 \times \dfrac{60\,\text{days}}{360\,\text{days}} = ₹1,02,000$

(vi) Creditors for raw material Purchases [Working Note (iii)]:

Annual Material Consumed (₹12,48,000 + ₹4,80,000)	₹17,28,000
Add: Closing stock of raw material	₹ 1,44,000
	₹18,72,000

Credit allowed by suppliers = $\dfrac{₹18,72,000}{360\,\text{days}} \times 30\,\text{days} = ₹ 1,56,000$

(vii) Creditors for wages:

Outstanding wage payment = $\dfrac{₹5,58,000}{360\,\text{days}} \times 15\,\text{days} = ₹ 23,250$

Question 6

*Answer **all**.*

(a) *What are the sources of short term financial requirement of the company?*   *(4 Marks)*

(b) *What is certainty Equivalent?*   *(4 Marks)*

(c) *What are the roles of Finance Executive in Modem World?*   *(2 Marks)*

<div align="center">OR</div>

What are the two main aspects of the Finance Function?

Answer

(a) **There are various sources available to meet short-term needs of finance. The different sources are discussed below:**

    (i) **Trade Credit:** It represents credit granted by suppliers of goods, etc., as an incident of sale. The usual duration of such credit is 15 to 90 days. It generates

automatically in the course of business and is common to almost all business operations. It can be in the form of an 'open account' or 'bills payable'.

(ii) Accrued Expenses and Deferred Income: Accrued expenses represent liabilities which a company has to pay for the services which it has already received like wages, taxes, interest and dividends.

(iii) Advances from Customers: Manufacturers and contractors engaged in producing or constructing costly goods involving considerable length of manufacturing or construction time usually demand advance money from their customers at the time of accepting their orders for executing their contracts or supplying the goods. This is a cost free source of finance and really useful.

(iv) Commercial Paper: A Commercial Paper is an unsecured money market instrument issued in the form of a promissory note.

(v) Treasury Bills: Treasury bills are a class of Central Government Securities. Treasury bills, commonly referred to as T-Bills are issued by Government of India to meet short term borrowing requirements with maturities ranging between 14 to 364 days.

(vi) Certificates of Deposit (CD): A certificate of deposit (CD) is basically a savings certificate with a fixed maturity date of not less than 15 days up to a maximum of one year.

(vii) Bank Advances: Banks receive deposits from public for different periods at varying rates of interest. These funds are invested and lent in such a manner that when required, they may be called back.

(b) Certainty Equivalent (CE)

It is a coefficient used to deal with risk in a capital budgeting context. It expresses risky future cash flows in terms of the certain cash flows which would be considered by the decision maker, as their equivalent. That is the decision maker would be indifferent between the risky amount and the (Lower) riskless amount considered to be its equivalent.

It is a guaranteed return that the management would accept rather than accepting a higher but uncertain return. Calculation of this equivalent involves the following three steps:

Step 1: Remove risks by substituting equivalent certain cash flows in the place of risky cash flows. This can be done by multiplying each risky cash flow by the appropriate CE Coefficient.

Step 2: Obtain discounted value of cash flow by applying riskless rate of interest.

Step 3: Apply normal capital budgeting method to calculate NPV by using the firm's required rate of return.

$$NPV = \sum_{t=0}^{n} \frac{\alpha_t NCF_t}{\left(1+k_f\right)^t} - I$$

Where,

NCF_t = the forecasts of net cash flow without risk-adjustment

α_t = the risk-adjustment factor or the certainly equivalent coefficient.

K_f = risk-free rate assumed to be constant for all periods.

Certainty Coefficient lies between 0 and 1.

(c) Role of Finance Executive in modern World

Today, the role of Financial Executive, is no longer confined to accounting, financial reporting and risk management. Some of the key activities that highlight the changing role of a Finance Executive are as follows:-

- Budgeting

- Forecasting

- Managing M & As

- Profitability analysis relating to customers or products

- Pricing Analysis

- Decisions about outsourcing

- Overseeing the IT function.

- Overseeing the HR function.

- Strategic planning (sometimes overseeing this function).

- Regulatory compliance.

- Risk management.

Or

(c) Value of a firm will depend on various finance functions/decisions. It can be expressed as:

V = f (I,F,D).

The finance functions are divided into long term and short term functions/decisions

Long term Finance Function Decisions

(a) **Investment decisions (I)**: These decisions relate to the selection of assets in which funds will be invested by a firm. Funds procured from different sources have to be invested in various kinds of assets. Long term funds are used in a project for various fixed assets and also for current assets.

(b) **Financing decisions (F):** These decisions relate to acquiring the optimum finance to meet financial objectives and seeing that fixed and working capital are effectively managed.

(c) **Dividend decisions(D):** These decisions relate to the determination as to how much and how frequently cash can be paid out of the profits of an organisation as income for its owners/shareholders. The owner of any profit-making organization looks for reward for his investment in two ways, the growth of the capital invested and the cash paid out as income; for a sole trader this income would be termed as drawings and for a limited liability company the term is *dividends*.

Short- term Finance Decisions/Function

Working capital Management (WCM): Generally short term decision are reduced to management of current asset and current liability (i.e., working capital Management)

SECTION – B: ECONOMICS FOR FINANCE

*Question No. **7** is compulsory.*

*Answer any **three** from the rest.*

Question 7

(a) *Calculate the Marginal Propensity to Consume (MPC) and Marginal Propensity to Save (MPS) from the following data:*

Income (Y)	Consumption (C)	Level
₹8,000	₹6,000	Initial level
₹12,000	₹9,000	Changed level

(2 Marks)

(b) *What would be the impact of each of the following on credit multiplier and money supply?*

   (i)   *If Commercial Banks keep 100 percent reserves.*

   (ii) *If Commercial Banks do not keep reserves.*

   (iii) *If Commercial Banks keep excess reserves.*   *(3 Marks)*

(c) *Explain the role of Government in a market economy as stated by Richard Musgrave.*

(3 Marks)

(d) *List the point of difference between fixed exchange rate and floating exchange rate.*

(2 Marks)

Answer

(a) Marginal Propensity to Consume (MPC) = $\dfrac{\Delta C}{\Delta Y}$

Where ΔC is change in consumption and ΔY is change in income

$\Delta C = (9,000 - 6,000)$; $\Delta Y = (12,000 - 8,000)$

$\dfrac{\Delta C}{\Delta Y} = \dfrac{3000}{4000} = \mathbf{0.75}$

Marginal Propensity to Save (MPS) = $\dfrac{\Delta S}{\Delta Y}$ = 1 - $\dfrac{\Delta C}{\Delta Y}$ = 1 – 0.75 = **0.25**

OR

S = Y-C

Marginal Propensity to Save (MPS) = $\dfrac{\Delta S}{\Delta Y}$

$$\frac{(12000-9000)-(8000-6000)}{(12,000-8000)}$$

$$=\frac{1000}{4000}=0.25$$

(b) Credit Multiplier = $\dfrac{1}{\text{Required Reserve Ratio}}$

  (i)   If commercial banks keep 100% reserves, the reserve deposit ratio is one and the value of money multiplier is one. Deposits simply substitute for the currency that is held by banks as reserves and therefore, no new money is created by banks.

  (ii) If commercial banks do not keep reserves and lends the entire deposits, it is a case of zero required reserve ratio and credit multiplier will be infinite and therefore money creation will also be infinite.

  (iii) Excess reserves are reserves over and above what banks are legally required to hold against deposits. The additional units of money that goes into 'excess reserves' of the commercial banks do not lead to any additional loans, and therefore, these excess reserves do not lead to creation of money. The increase in banks' excess reserves reduces the credit multiplier, causing the money supply to decline.

(c) Richard Musgrave, in his classic treatise 'The Theory of Public Finance' (1959), introduced the three branch taxonomy of the role of government in a market economy. The objective of the economic system and the role of government is to improve the wellbeing of individuals or households. According to 'Musgrave Three-Function Framework', the functions of government are to be separated into three, namely, resource allocation, (efficiency), income redistribution (fairness) and macroeconomic stabilization. The allocation and distribution functions are primarily microeconomic functions, while stabilization is a macroeconomic function. The allocation function aims to correct the sources of inefficiency in the economic system while the distribution role ensures that the distribution of wealth and income is fair. The stabilization branch is to ensure achievement of macroeconomic stability, maintenance of high levels of employment and price stability.

(d)

Fixed Exchange Rate	Floating Exchange Rate
A fixed exchange rate, also referred to as pegged exchange rate, is an exchange rate regime under which a country's central bank and/ or government announces or decrees what its	Under floating exchange rate regime, the equilibrium value of the exchange rate of a country's currency is market-determined i.e. the demand for and supply of currency relative to other currencies determine the exchange rate.

currency will be worth in terms of either another country's currency or a basket of currencies or another measure of value, such as gold.	
In order to maintain the exchange rate at the predetermined level, the central bank intervenes in the foreign exchange market	There is no interference on the part of the government or the central bank of the country in the determination of exchange rate. Any interference in the foreign exchange market on the part of the government or central bank would be only for moderating the rate of change

Question 8

(a) (i) *Explain the following modified equation of exchange as given by Irving Fisher:*

MV +M'V'=PT **(3 Marks)**

(ii) *Describe the meaning and mechanism of 'crowding out' effect of public expenditure.*

(3 Marks)

(b) (i) *Explain the leakages and injections in the circular flow of Income.* **(2 Marks)**

(ii) *Describe features of public goods.* **(2 Marks)**

Answer

(a) (i) Modified Equation of Exchange

MV + M' V' = PT

MV + M' V' = PT is an extended form of the original equation of exchange which Fisher gave to include demand deposits (M') and their velocity (V') in the total supply of money. The equation can also be rewritten as P = (MV + M' V') / T

From the above equation, it is evident that the price level is determined by the following factors: (i) Quantity of money in circulation (M), (ii) the velocity of circulation of money (V), (iii) the volume of credit money (M'), the velocity of circulation of credit money (V') and the volume of trade (T).

The equation of exchange further shows that the price level (P) is directly related to M, V, M' and V'. It is, however, inversely related to T. Velocity of money in circulation (V) and the velocity of credit money (V') remain constant. Since full employment prevails and since T is function of national income the volume of transactions T is fixed in the short run.

The total volume of transactions (T) multiplied by the price level (P) represents the demand for money. The demand for money (PT) is equal to the supply of money

(MV + M'V'). In any given period, the total value of transactions made is equal to PT and the value of money flow is equal to MV + M'V'.

(ii) **Crowding Out:**

Meaning

'Crowding out' effect is the negative effect fiscal policy may generate when spending by government in an economy substitutes private spending. For example, if government provides free computers to students, the demand from students for computers may not be forthcoming.

Mechanism

The interest rates in an economy increase when:

- Government increases its spending by borrowing from the loanable funds from market and thus the demand for loans increases.

- Government increases the budget deficit by selling bonds or treasury bills and the amount of money with the private sector decreases.

    Due to high interest, private investments, especially the ones which are interest – sensitive, will be reduced. Fiscal policy becomes ineffective as the decline in private spending partially or completely offset the expansion in demand resulting from an increase in government expenditure.

(b) (i) **Leakages:** A leakage is an outflow or withdrawal of income from the circular flow. Leakages are money leaving the circular flow and therefore, not available for spending on currently produced goods and services. Leakages reduce the flow of income.

Injections: An injection is a non-consumption expenditure. It is an expenditure on goods and services produced within the domestic territory but not used by the domestic household for consumption purposes. Injections are exogenous additions to the circular flow and add to the total volume of the basic circular flow.

In the two-sector model with households and firms, household saving is the only leakage and investment is the only injection. In the three-sector model which includes the government, saving and taxes are the two leakages and investment and government purchases are the two injections. In the four-sector model which includes foreign sector also, saving, taxes, and imports are the three leakages; investment, government purchases, and exports are the three injections.

The state of equilibrium occurs when the total leakages are equal to the total injections that occur in the economy.

Savings + Taxes + Imports = Investment + Government Spending + Exports

(ii) Features of public goods

- Public goods yield utility and their consumption is essentially collective in nature.

- Public goods are non rival in consumption i.e. consumption of a public good by one individual does not reduce the quality or quantity available for all other individuals

- Public goods are non-excludable i.e. consumers cannot (at least at less than prohibitive cost) be excluded from consumption benefits

- Public goods are characterized by indivisibility, each individual may consume all of the good i.e. the total amount consumed is the same for each individual.

- Once a public good is provided, the additional resource cost of another person consuming the good is zero. No direct payment by the consumer is involved in the case of pure public goods and these goods are generally more vulnerable to issues such as externalities, inadequate property rights, and free rider problems

- Competitive private markets will fail to generate economically efficient outputs of public goods. E.g. national defence.

Question 9

(a)   *(i)*   *Explain why people hold money according to Liquidity Preference Theory.* ***(3 Marks)***

     (ii)   *Which types of Government interventions are applied for correcting information failure?*   ***(2 Marks)***

(b)   *Suppose in an economy:*

Consumption Function	*C = 150 + 0.75 Yd*
Investment spending	*I = 100*
Government spending	*G= 115*
Tax	*Tx = 20 + 0.20 Y*
Transfer Payments	*Tr = 40*
Exports	*X = 35*
Imports	*M = 15 + 0.1 Y*

(5 Marks)

Where, Y and Yd are National Income and Personal Disposable Income respectively. All figures are in rupees.

Find:

(i)   *The equilibrium level of National Income*

(ii)   *Consumption at equilibrium level*

(iii)   *Net Exports at equilibrium level*   ***(5 Marks)***

Answer

(a) (i) Reasons for holding money as per Liquidity Preference Theory:

According to Keynes' Liquidity Preference Theory', people hold money (M) in cash for three motives:

i. **The transactions motive:** People hold cash for current transactions for personal and business exchanges i.e. to bridge the time gap between receipt of income and planned expenditures.

ii. **The precautionary motive:** People hold cash to make unanticipated expenditures that may occur due to unforeseen and unpredictable contingencies.

iii. **The speculative motive:** This motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure. According to Keynes, people demand to hold money balances to take advantage of the future changes in the rate of interest, which is the same as future changes in bond prices.

(ii) Government Interventions: For combating the problem of market failure due to information failure the following interventions are resorted to:

- Government makes it mandatory to have accurate labelling and content disclosures by producers.

- Public dissemination of information to improve knowledge and subsidizing of initiatives in that direction.

- Regulation of advertising and setting of advertising standards to make advertising more responsible, informative and less persuasive.

A few examples are: SEBI mandates on accurate information disclosure to prospective buyers of new stocks, mandatory statutory information, licensing of doctors practicing medicine, awareness campaigns and funding of organisations to influence public, media and government attitudes.

(b) The consumption function is

C = 150 + 0.75Yd

Level of Disposable income Yd is given by

Y_d = Y-Tax + Transfer Payments, Where, Transfer Payment = Tr = 40

     = Y – (20+ 0.20 Y) + 40   = Y – 20 – 0.20Y +40

     = Y – 0.2Y - 20+40

Yd = 20 + 0.8 Y and C = 150+0.75 Yd

C = 150 + .75 (20 +0.8 Y) where Yd = (20+0.8Y)

C = 150 +15+ 0.6Y

C = 165 + 0.6Y

(i)   The equilibrium level of national income

Y = C + I + G + (X-M)

Y = 165 + 0.6Y +100+115+ [35 – (15+0.1Y)]

  = 165 +0.6 Y +100+115+ [35 -15 – 0.1Y]

  = 165+0.6Y +215+ 35 – 15 - 0.1Y

Y = 400+ 0.5Y

Y-0.5Y = 400; 0.5 Y = 400

Y = 400 / 0.5   = 800

The equilibrium level of national income is ₹ 800

(ii) Consumption at equilibrium level of national income of ₹ 800

C = 165 + 0.6Y

C = 165 + 0.6(800)

C = 165+480 = 645

Consumption at equilibrium level = ₹ 645

(iii) Net Exports at equilibrium level of national income 800

Net exports   = Value total exports - Value of total imports

Given, exports X = 35; and imports M = 15+0.1Y

Net exports   = [35 - (15+0.1Y)]

                 = 35 -15 – 0.1Y

                 = 35 -15 – (0.1X 800) = 35 – 15 – 80 = - 60

Net exports = ₹ (-)60

There is an adverse balance of trade

Question 10

(a) (i)   *Explain the difference between Liquidity Adjustment Facility (LAP) and Marginal Standing Facility (MSF).*   *(3 Marks)*

     (ii) *From the following data, compute the Gross National Product at Market Price (GNPMP) using value added method:*

	(₹ In crores)
Value of output in Secondary Sector	1000
Intermediate consumption in Primary Sector	300
Value of output in Tertiary Sector	3000
Intermediate consumption in Secondary Sector	400
Net factor income from abroad	(-) 100
Value of output in Primary Sector	800
Intermediate consumption in Tertiary Sector	900

(3 Marks)

(b) *(i)* *What do you mean by anti-dumping duties?* **(2 Marks)**

(ii) *Describe deterrents to Foreign Direct Investment (FDI) in the country.* **(2 Marks)**

Answer

(a) **(i)** **Difference between Liquidity Adjustment Facility (LAF) and Marginal Standing Facility (MSF).**

Liquidity Adjustment Facility (LAF) which was introduced by RBI in June, 2000, is a facility extended to the scheduled commercial banks and primary dealers to avail of liquidity in case of requirement on an overnight basis against the collateral of government securities including state government securities. Its objective is to assist banks to adjust their day to day mismatches in liquidity. Currently, the RBI provides financial accommodation to the commercial banks through repos / reverse repos under LAF.

Marginal Standing Facility (MSF) which was introduced by RBI in its monetary policy statements 2011 -12, refers to the facility under which scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit at a penal rate of interest. This provides a safety valve against unexpected liquidity shocks to the banking system. The MSF would be the last resort for banks once they exhaust all borrowing options including the liquidity adjustment facility.

(ii) **Computation of Gross National Product at Market Price (GNP$_{MP}$)**

GNP$_{MP}$ = (Value of output in primary sector – Intermediate consumption of primary sector) + (Value of output in secondary sector – Intermediate consumption of secondary sector) + (Value of output in tertiary sector – Intermediate consumption of tertiary sector) + Net Factor Income from Abroad

GNPMP   = [(800- 300) + (1000 – 400) + (3000 – 900)] + (-100)

= 500+ 600+ 2100 - 100

= 3200 -100 = ₹ **3100 Crores**

(b) (i) Anti –Dumping Duties

An anti-dumping duty is an extra import *duty* that a domestic government imposes on foreign imports that it believes are priced below fair market value causing injury to the competing domestic industry. It is a protectionist tariff equal to the difference between the importing country's FOB price of the goods at the time of their import and the market value of similar goods in the exporting country. An anti-dumping duty increases the price of imports and brings it closer to the domestic price and prevents injury to domestic industry due to unfair competition.

(ii) Deterrents to Foreign Direct Investment (FDI)

(i) Poor macro-economic environment, such as, infrastructure lags, high rates of inflation and continuing instability, balance of payment deficits, exchange rate volatility, unfavourable tax regime (including double taxation), small size of market and lack of potential for its growth and poor track-record of investments.

(ii) Unfavourable resource and labour market conditions such as poor natural and human resources, rigidity in the labour market, low literacy, low labour skills, language barriers and high rates of industrial disputes

(iii) Unfavourable legal and regulatory framework such as absence of well-defined property rights, lack of security to life and property, stringent regulations, cumbersome legal formalities and delays, bureaucracy and corruption and political instability.

(iv) Lack of host country trade openness viz. lack of openness, prevalence of non-tariff barriers, lack of a general spirit of friendliness towards foreign investors, lack of facilities for immigration and employment of foreign technical and administrative personnel.

Question 11

(a) (i) Describe the objectives of World Trade Organization (WTO).   *(3 Marks)*

(ii) Examine why General Agreement in Tariff & Trade (GATT) lost its relevance.

(2 Marks)

(b) (i) Explain the objectives of Fiscal Policy.   *(3 Marks)*

(ii) How do import tariffs affect International Trade?   *(2 Marks)*

OR

How do changes in Cash Reserve Ratio (CRR) impact the economy?   *(2 Marks)*

Answer

(a) (i) Objectives of World Trade Organization (WTO):

The WTO aims to facilitate the flow of international trade smoothly, freely, fairly and predictably for the benefit of all. The chief objectives of WTO are:

- to set and enforce rules for international trade

- to provide a forum for negotiating and monitoring further trade liberalization

- to resolve trade disputes

- to increase the transparency of decision-making processes

- to cooperate with other major international economic institutions involved in global economic management and

- to help developing countries to get benefit fully from the global trading system

(ii) The GATT lost its relevance by 1980s because:

- It was obsolete to the fast evolving contemporary complex world trade scenario characterized by emerging globalisation

- International investments had expanded substantially

- Intellectual property rights and trade in services were not covered by GATT

- World merchandise trade increased by leaps and bounds and was beyond its scope

- The ambiguities in the multilateral system could be heavily exploited

- Efforts at liberalizing agricultural trade were not successful

- There were inadequacies in institutional structure and dispute settlement system

- It was not a treaty and therefore terms of GATT were binding only insofar as they are not incoherent with a nation's domestic rules

(b) (i) Objectives of Fiscal Policy

Fiscal Policy refers to the policy of government related to public revenue and public expenditure. The objectives of fiscal policy are derived from the aspirations and goals of the society and vary from country to country. The most common objectives of fiscal policy are:

- Achievement and maintenance of full employment,

- Maintenance of price stability,

- Acceleration of the rate of economic development,

- Equitable distribution of income and wealth,

- Eradication of poverty, and

- Removal of regional imbalances in different parts of the country.

The importance as well as order of priority of these objectives may vary from country to country and from time to time. For instance, while stability and equality may be the priorities of developed nations, economic growth, employment and equity may get higher priority in developing countries. Also, these objectives are not always compatible; for instance the objective of achieving equitable distribution of income may conflict with the objective of economic growth and efficiency.

(ii) Demerits of Tariffs in International Trade:

Tariffs are the most visible and universally used trade measures that determine market access for goods. Tariffs are aimed at altering the relative prices of goods and services imported, so as to contract the domestic demand and thus regulate the volume of their imports.

(i) Tariff barriers create obstacles to international trade, decrease the volume of imports and of international trade.

(ii) The prospect of market access of the exporting country is worsened when an importing country imposes a tariff.

(iii) By making imported goods more expensive, tariffs discourage domestic consumption of imported foreign goods and therefore imports are discouraged.

(iv) Tariffs create trade distortions by disregarding comparative advantage and prevent countries from enjoying gains from trade arising from comparative advantage. Thus, tariffs discourage efficient production in the rest of the world and encourage inefficient production in the home country.

<div align="center">**OR**</div>

(ii) Impact of changes in Cash Reserve Ratio (CRR):

Change in Cash Reserve Ratio is one of the important quantitative tools aiding in liquidity management. Higher the CRR with the central bank, lower will be the liquidity in the system and vice versa. In order to control credit expansion during periods of inflation, the central bank increases the CRR. With higher CRR, banks have to keep more reserves and the banks' lendable resources get depleted leading to decrease in the volume of bank lending and contraction in credit and money supply in the economy.

During deflation, the central bank reduces the CRR in order to enable the banks to expand credit and increase the supply of money available in the economy. With more credit available in the market, economic activities get accelerated bringing the economy back to stability and economic growth.